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LETTER TO THE EDITOR

Cerebral toxoplasmosis treated with clindamycin alone in an HIV-positive patient allergic to sulfonamides

A 29-year-old woman with HIV infection was admitted to our hospital in July 2001 with a history of headache, vomiting, fever, seizure and weakness of the right side. HIV infection had been diagnosed and antiretroviral therapy with zidovudine, lamivudine and nevirapine had been initiated one month before admission. Neurological examination revealed that she had cerebellar dysarthria, mild dysmetria, dysdiadokokinesis and intention tremor of the right hand. She had right upper motor neurone-type facial palsy. Neck stiffness was not present and the fundi showed no papilloedema but cotton wool spots were seen bilaterally. The rest of the systemic examination was within normal limits. Cranial MRI showed four mass lesions which gave high signals on T2 weighted images. One lesion was located in the right cerebellar hemisphere, two were in the left occipital region and one was in the left parietal region. They were localized in the cortex and were 10—155 mm (Figure 1). The lesions had a region of peripheral edema and the possibility of toxoplasma encephalitis was suggested. Empirical anti-toxoplasmosis therapy was started with intravenous clindamycin (600 mg q6h) because the patient was allergic to sulfonamides. Antiretroviral therapy with zidovudine, lamivudine and nevirapine was continued. Serological investigation for *Toxoplasma gondii* with EIA was performed and while IgM antibodies to *T. gondii* were negative, the IgG antibody level was >300 IU/ml. The patient's CD4 T cell count was 25/mm^3 and the ratio of CD4 to CD8 was 0.23. The PPD test was anergic and prophylaxis for tuberculosis with isoniazid was started. HIV viral load was >750,000 copies/ml.

Intravenous clindamycin therapy was continued for 30 days. In this period all neurological signs except tremor disappeared. At the end of this period, therapy was changed to oral clindamycin at the same dosage (600 mg q6h). Two months later, cranial MRI showed that the lesion in the right cerebellar hemisphere and the peripheral edema of the other lesions had disappeared. Clinical signs resolved completely. HIV viral load was 9776 copies/ml, CD4 cell count was 131/mm^3 and the ratio of CD4/CD8 was 0.41. Serological tests for *T. gondii* were performed again and they were unchanged. Clindamycin dosage was decreased to 1800 mg daily. In the tenth month of therapy, cranial MRI showed no lesions and the patient continued for two years with 900 mg of clindamycin daily. She had no signs or symptoms of encephalitis and her HIV viral load was <50 copies/ml. She is still under follow-up and she takes clindamycin capsules (150 mg) three times a day.

Although toxoplasmosis is usually a self-limited infection, in immunocompromised individuals it may be life-threatening.[1,2] The incidence of cerebral toxoplasmosis among patients with HIV infection varies from 5—40%[3—5] and toxoplasmosis is the most common cause of intracranial mass lesions in patients with AIDS, accounting for 50—70% of all mass lesions in this population. More than 95% of these cases are due to reactivation of a chronic latent infection.[2,5—7] The mainstay of treatment for toxoplasma encephalitis is combination therapy. The agents of choice are sulfadiazine with pyrimethamine; patients who are unable to tolerate sulfonamides can be treated with a combination of clindamycin and pyrimethamine.[2,5,8,9] Therapy in this patient was started with clindamycin alone because the patient was allergic to sulfonamides and pyrimethamine is not available for therapeutic use in Turkey. According to the literature no case has been treated successfully with clindamycin alone. Roemer et al.[9] used clindamycin (2400 mg/d) to treat a patient with cerebral toxoplasmosis but the disease progressed rapidly and the patient died. The relative efficacy of pyrimethamine—clindamycin combination therapy was shown to be equal to that of pyrimethamine—sulfadiazine in a randomized clinical trial,[10] but potential use of clindamycin as a single agent has not been established.[8] In a murine toxoplasmosis model, Nikolic et al. showed that survival rates and survival times of infected animals increased in parallel with the clindamycin dosage and treatment duration. The authors observed that a three-week treatment course with 50 mg/kg per day was better

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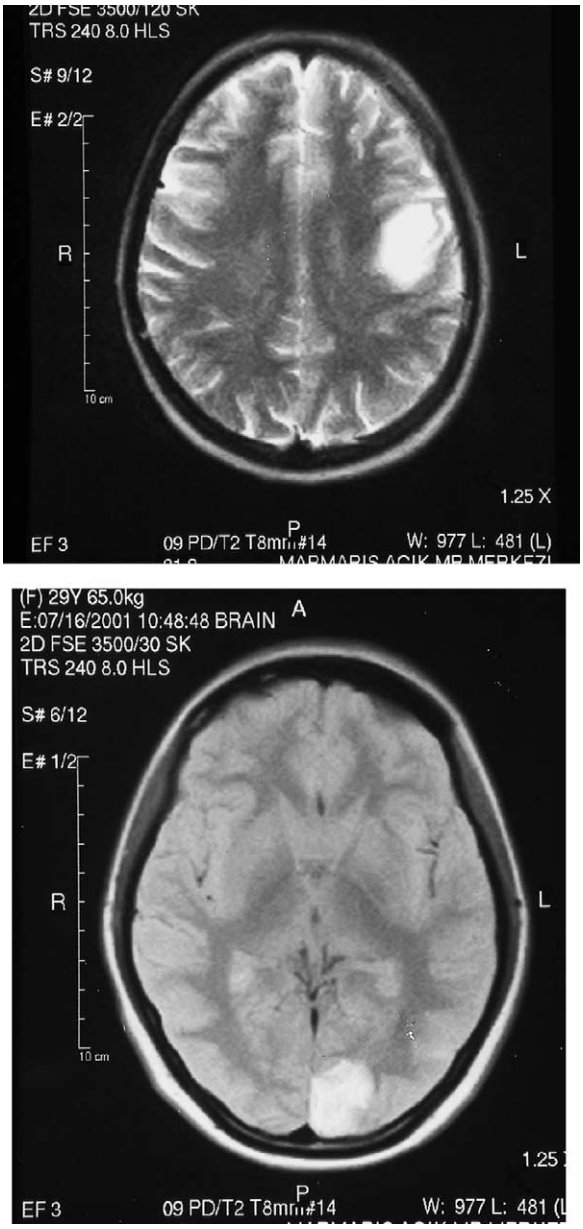

Figure 1 T2 weighted images of the patient at the time of admission.

than a dosage eight times higher given for a shorter period.[11] Gatti et al.[3] found that clindamycin concentrations in CSF were several times higher than the parasiticidal concentration and they suggested combination therapy with pyrimethamine because of the synergistic activity of these two agents. For maintenance treatment of HIV-infected patients, continuation of the acute therapeutic regimen is suggested.[2,5,8]

In AIDS patients with toxoplasma encephalitis, radiological improvement is seen in most of the patients after two to three weeks of treatment. Complete resolution takes from six weeks to six months.[2] In the patient reported here, brain lesions resolved very slowly and at the second month of therapy one of the lesions had disappeared and clinical signs had resolved completely. Complete resolution of the radiological signs was observed at the tenth month of therapy. In some in vitro studies, it was found that clindamycin had a delayed effect on *T. gondii*.[12] In addition, it was shown that penetration of clindamycin through the blood-brain barrier is poor.[3] Although it is not possible to extrapolate whether CSF concentrations of clindamycin are predictive of the concentrations in the cerebral parenchyma, these findings might be the reason for the slow resolution of this patient's findings.

Conflict of interest: No conflict of interest to declare.

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